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EXAMINER

AKHAVANNIK, HUSSEIN

ART UNIT PAPER NUMBER

2621

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14

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/621,772

Applicant(s)

BERENZ ET AL.

Examiner

Hussein Akhavannik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 7.13.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings were received on October 14, 2003. These drawings are accepted.

### ***Response to Amendment***

2. The cancellation of claim 9 overcomes the Examiner's objection cited in paragraph 1 of the previous office action (now Paper No. 6).
3. The cancellation of claims 18 and 21-22 overcome the Examiner's 35 U.S.C. 112, first paragraph rejection cited in paragraph 5 of the previous office action (now Paper No. 6).

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 23-44 have been considered but are moot in view of the new ground(s) of rejection.

### ***Double Patenting***

5. Claims 35-39 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 10, 12-13, and 21 of copending Application No. 09/621,160 (herein Berenz et al) in view of Lemelson et al (U.S. Patent No. 6,400,835).

Referring to claim 35,

- i. An illuminator for illuminating an interior portion of the vehicle corresponds to claim 1i of Berenz et al.
- ii. A detector for detecting radiation reflected from a person located in the interior portion, the detector being responsive to the detected radiation for providing image signals corresponds to claim 1ii of Berenz et al.

iii. A processor that is responsive to the image signals from the detector corresponds to claim 1iii of Berenz et al.

iv. The processor including face recognition software for analyzing the image signals for facial features of the person, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant corresponds to claim 1iii of Berenz et al.

v. The processor sounding an alarm and recording the image of the person in a memory when the processor determines that the person is not an authorized vehicle occupant is not explicitly explained by Berenz et al. Berenz et al do explain recording the image of the person in a memory when the processor determines that the person is not an authorized vehicle occupant corresponding to claim 21iii. However, Berenz et al do not explain sounding an alarm. Lemelson et al explain in column 12, lines 34-42 and column 5, lines 42-44 that if a person is not recognized, then an alarm is set to attract nearby persons. It would have been obvious to one of ordinary skill in the art at the time the invention was made to sound an alarm when the processor determines that the person is not an authorized vehicle occupant in order to increase the safety of the vehicle.

Referring to claim 36, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation corresponds claim 1i-ii of Berenz et al

Referring to claim 37, an infrared filter positioned between the detector and the predefined field corresponds to claim 10 of Berenz et al.

Referring to claim 38, the infrared source including a cluster of infrared light emitting diodes corresponds to claim 6 of Berenz et al.

Referring to claim 39, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light corresponds to claims 12 and 13 of Berenz et al.

6. Claims 40-44 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 6, 10, 12-13, and 21 of copending Application No. 09/621,160 (herein Berenz et al) in view of Heslin et al (U.S. Patent No. 6,326,613).

Referring to claim 40,

- i. An illuminator for illuminating an interior portion of the vehicle corresponds to claim 1i of Berenz et al.
- ii. A detector for detecting radiation reflected from a person located in the interior portion, the detector being responsive to the detected radiation for providing image signals corresponds to claim 1ii of Berenz et al.
- iii. A processor that is responsive to the image signals from the detector corresponds to claim 1iii of Berenz et al.
- iv. The processor including face recognition software for analyzing the image signals for facial features of the person, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant corresponds to claim 1iii of Berenz et al.
- v. The processor, in response to a facial feature match, identifying the occupant and limiting operation of the vehicle to a maximum driving speed associated with the

identified occupant is not explicitly explained by Berenz et al. However, Heslin et al do explain identifying a driver and limiting the vehicle to a maximum driving speed associated with the driver in column 7, lines 11-14. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to limit operation of the vehicle to a maximum driving speed associated with the identified driver so that the vehicle is operated in safer conditions.

Referring to claim 41, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation corresponds claim 1i-ii of Berenz et al

Referring to claim 42, an infrared filter positioned between the detector and the predefined field corresponds to claim 10 of Berenz et al.

Referring to claim 43, the infrared source including a cluster of infrared light emitting diodes corresponds to claim 6 of Berenz et al.

Referring to claim 44, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light corresponds to claims 12 and 13 of Berenz et al.

This is a provisional obviousness-type double patenting rejection.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who

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has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 35-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Lemelson et al.

Referring to claim 35,

- i. An illuminator for illuminating an interior portion of the vehicle is explained by Lemelson et al in column 6, line 65 to column 7 , line 7 as an infrared laser.
- ii. A detector for detecting radiation reflected from a person located in the interior portion, the detector being responsive to the detected radiation for providing image signals indicative of an image of the person is explained by Lemelson et al in column 5, lines 19-30 and illustrated in figures 1 and 3. Lemelson et al explains that an infrared camera (12b) may be used in conjunction with the regular video camera (12a) to image the face of a person in a vehicle (11).
- iii. A processor that is responsive to the image signals from the detector is explained by Lemelson et al in column 11, lines 23-30.
- iv. The processor including face recognition software for analyzing the image signals for facial features of the person, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is

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an authorized vehicle occupant is explained by Lemelson et al in column 5, lines 1-30 and column 5, line 46 to column 6, line 31. Lemelson et al explain that the face images are compared with a stored set of face images of authorized drivers in order to determine a "match".

v. The processor sounding an alarm and recording the image of the person in a memory when the processor determines that the person is not an authorized vehicle occupant is explained by Lemelson et al in column 12, lines 34-42 and column 5, lines 42-44. Lemelson et al explain that if a person is not recognized, then an alarm is set to attract nearby persons. Furthermore, Lemelson et al explain that if a face image of a person is not stored in the database (and thereby not authorized), then the image captured of the person maybe stored to supplement the images in the database.

Referring to claim 36, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation corresponds to claim 35i-ii, wherein the infrared laser is an infrared source and the infrared detector receives infrared radiation.

Referring to claim 37, an infrared filter positioned between the detector and the predefined field is inherent in the camera 12 in figure 3 of Lemelson et al. The first section of the camera, 12A, captures conventional signals from the scene being imaged and the second section, 12B, captures infrared signals. In order to capture only the infrared spectrum, section 12B of the camera would inherently have to use an infrared filter so that the frequencies outside the infrared spectrum are not captured.



***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 23-25, 27, 29-31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Son (U.S. Patent No. 6,323,761) in view of Lemelson et al (U.S. Patent No. 6,400,835).

Referring to claim 23,

- i. An illuminator for illuminating a predefined field located outside of the vehicle and adjacent an entryway to an interior of the vehicle is explained by Son in column 8, lines 15-19. Son explains that an infrared lamp is used to illuminate the iris of a potential operator at night or in dimly lit interiors, such as parking garages. The predetermined field of the illumination is illustrated by Son in figure 3 by the field 46, which is located outside of the vehicle and is also adjacent to the door (entryway to an interior) of the vehicle.
- ii. A detector for detecting radiation reflected from a person located in the predefined field, the detector being responsive to the detected radiation for providing image signals is illustrated by Son in figure 3 by the vehicle security access system camera 16. Son explains that the camera captures iris images in column 8, lines 4-14.
- iii. A processor that is responsive to the image signals from the detector is illustrated by Son in figure 3 by the computer 28.

- iv. The processor including face recognition software for analyzing the image signals for facial features of the person located in the predefined field, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant is not explicitly explained by Son. The processor of Son includes iris recognition software in order to analyze the images captured by the camera (16) and identify whether a person is an authorized vehicle occupant as explained in column 8, lines 4-28. However, it does not include facial recognition software. Lemelson et al explain using face recognition software for analyzing image signals for facial features of a person in column 5, lines 1-30 and column 5, line 46 to column 6, line 31. Lemelson et al further explain that iris recognition may be used as a replacement for facial recognition in column 5, lines 31-36. Thus, the system of Lemelson et al allows facial recognition and iris recognition to be used interchangeably in order to recognize a person attempting to access a vehicle. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use facial recognition instead of iris recognition, as suggested by Lemelson et al, to determine whether a person is an authorized vehicle occupant in the system of Son because Lemelson et al explain that facial thermal patterns remain substantially unchanged over a number, thereby accurately identifying an authorized driver over a longer period of time.
- v. The processor causing the entryway to automatically become unlocked in response to a determination that the person is an authorized vehicle occupant is explained by Son in column 8, lines 29-34.

Referring to claim 24, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation is explained by Son in column 8, lines 41-46. The camera (16) would inherently have to be an infrared detector in order to receive reflected infrared radiation emitted by the infrared lamp of Son.

Referring to claim 25, an infrared filter positioned between the detector and the predefined field is explained by Son in column 8, lines 41-46. In order to capture only the infrared spectrum, the camera (16) would inherently have to use an infrared filter so that the frequencies outside the infrared spectrum are not captured.

Referring to claim 27, the known facial features of the authorized vehicle occupants being facial images of the authorized occupants that are stored in a memory associated with the processor corresponds to claim 23iv. Lemelson et al explain in column 5, lines 1-30 and column 5, line 46 to column 6, line 31 that the thermal pattern of an authorized driver's face and an "eigenface" of an authorized driver's face are stored. Captured thermal patterns and "eigenfaces" are then compared to the stored authorized driver images in order to determine whether a person is an authorized driver.

Referring to claim 29,

- i. The illuminator being adapted to illuminate a predefined interior vehicle field and the detector being adapted to detect radiation reflected from an occupant of the vehicle that is located in the predefined vehicle interior field and to provide occupant image signals is not explicitly explained by Son. However, Lemelson et al explain in column 6, line 41 to column 7, line 7 and illustrate in figure 1 that an infrared illuminator is used to illuminate a field of the interior of a vehicle and that multiple camera are adapted to

detect radiation reflected from the driver. The interior fields are illustrated by Lemelson et al in figure 1 by the dotted lines.

ii. The processor comparing facial features of the occupant image signals to the known facial features of authorized vehicle occupants and causing a vehicle operation to be performed in response to a facial feature match is not explicitly explained by Son. However, Lemelson et al explain in column 5, lines 1-30 and column 5, line 45 to column 6, line 36 that the facial features of a driver are compared with facial features of authorized drivers in order to close a switch to allow operation of a vehicle. By monitoring the interior of the vehicle in addition to the exterior of the vehicle (corresponding to claim 23), the vehicle will be better guarded against unauthorized users. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to illuminate a predefined interior of a vehicle, detect radiation reflected from an occupant of the vehicle that is located in the predefined vehicle interior field, and compare facial features of occupant image signals to the known facial features of authorized vehicle occupants and cause a vehicle operation to be performed in response to a facial feature match so that the vehicle protection is increased in the system of Son.

Referring to claim 30, the system monitoring gestures of the occupant and performing vehicle functions in response to detected gestures is explained by Son in column 8, lines 46-50.

Referring to claim 31, the vehicle being started in response to the facial feature match between the occupant image signals and the known facial features is not explicitly explained by Son. However, Lemelson et al explain in column 3, lines 39-42 that a start switch is enabled

once a driver is determined to be authorized to drive the vehicle. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to start a vehicle in response to the facial feature match between the occupant image signals and the known facial features so that the vehicle protection is increased in the system of Son.

Referring to claim 33, the processor actuating the intrusion alarm in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants is explained by Son in column 9, lines 20-28, wherein the iris features are substituted for facial features, corresponding to claim 23iv.

Referring to claim 34, the processor recording an image of the occupant in a memory in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants is not explicitly explained by Son. However, Lemelson et al explain in column 5, lines 42-44 that if a face image of a person is not stored in the database (and thereby not authorized), then the image captured of the person maybe stored to supplement the images in the database. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to record an image of the occupant in a memory in response to determining that the facial features of the occupant image signals do not match the known facial features of authorized vehicle occupants so that the database maybe expanded for additional drivers.

11. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Son in view of Lemelson et al, and further in view of Lu et al (U.S. Patent No. 5,331,544).

Referring to claim 26, the infrared source including a cluster of infrared light emitting diodes is not explicitly explained by Son or Lemelson et al. However, Lu et al explain in column

5, lines 32-34 and illustrate in figure 3 by reference number 56 that an array of infrared light emitting diodes are used to illuminate a face in a facial recognition system (illustrated in figure 5). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to modify the system of Son and Lemelson et al by using an array of infrared light emitting diodes to illuminate the face of a person, since the Applicant has not disclosed that using a cluster of infrared light emitting diodes solves any stated problem or is for any particular purpose and it appears that any infrared light emitting source would perform equally as well.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Son in view of Lemelson et al, and further in view of Numazaki et al (U.S. Patent No. 6,144,366).

Referring to claim 28, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light is not explicitly explained by Son or Lemelson et al. However, Numazaki et al do explain generating a first image when an infrared source is on and generating a second image when an infrared source is off and determining a difference between the first and second images to mitigate the effects of ambient light in column 10, lines 40-56, column 11, lines 9-56, and column 14, lines 23-42. Numazaki et al also explain using this processing in a facial recognition system in column 32, lines 43-58 and illustrate the facial recognition system in figure 33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain a first image when the illuminator is on and obtain a second image when the illuminator is off and determine a difference between the first and second images to

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mitigate the effects of ambient light in order to determine a more accurate image of a face in the facial recognition system of Son and Lemelson et al by eliminating the effects of external lights sources (as explained by Numazaki et al in column 10, lines 40-46).

13. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Son in view of Lemelson et al, and further in view of Heslin et al (U.S. Patent No. 6,326,613).

Referring to claim 32, the processor, in response to a facial feature match, identifying the occupant and limiting operation of the vehicle to a maximum driving speed associated with the identified occupant is not explicitly explained by Son or Lemelson et al. Though Lemelson et al do explain changing the settings of a vehicle according to the recognized user in column 11, line 59 to column 12, line 10, they do not explain controlling the vehicle speed. Heslin et al do explain identifying a driver and limiting the vehicle to a maximum driving speed associated with the driver in column 7, lines 11-14. The system of Son and Lemelson et al controls the parts of the vehicle engine so that the car may be automatically started as explained by Lemelson et al in column 16, lines 9-25, so embedding a speed control means would be possible. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to limit operation of the vehicle to a maximum driving speed associated with the identified driver as explained by Heslin et al, so that the vehicle of Son and Lemelson et al is operated in safer conditions.

14. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Lu et al.

Referring to claim 38, the infrared source including a cluster of infrared light emitting diodes is not explicitly explained by Lemelson et al. However, Lu et al explain in column 5,

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lines 32-34 and illustrate in figure 3 by reference number 56 that an array of infrared light emitting diodes are used to illuminate a face in a facial recognition system (illustrated in figure 5). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to modify the system Lemelson et al by using an array of infrared light emitting diodes to illuminate the face of a person, since the Applicant has not disclosed that using a cluster of infrared light emitting diodes solves any stated problem or is for any particular purpose and it appears that any infrared light emitting source would perform equally as well.

15. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Numazaki et al.

Referring to claim 39, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light is not explicitly explained by Lemelson et al. However, Numazaki et al do explain generating a first image when an infrared source is on and generating a second image when an infrared source is off and determining a difference between the first and second images to mitigate the effects of ambient light in column 10, lines 40-56, column 11, lines 9-56, and column 14, lines 23-42. Numazaki et al also explain using this processing in a facial recognition system in column 32, lines 43-58 and illustrate the facial recognition system in figure 33.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain a first image when the illuminator is on and obtain a second image when the illuminator is off and determine a difference between the first and second images to mitigate the



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effects of ambient light in order to determine a more accurate image of a face in the facial recognition system of Lemelson et al by eliminating the effects of external lights sources (as explained by Numazaki et al in column 10, lines 40-46).

16. Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Heslin et al.

Referring to claim 40,

i. An illuminator for illuminating an interior portion of the vehicle corresponds to claim 35i.

ii. A detector for detecting radiation reflected from a person located in the interior portion, the detector being responsive to the detected radiation for providing image signals indicative of an image of the person correspond to claim 35ii.

iii. A processor that is responsive to the image signals from the detector corresponds to claim 35iii.

iv. The processor including face recognition software for analyzing the image signals for facial features of the person, the processor comparing facial features of the person to known facial features of authorized vehicle occupants to determine whether the person is an authorized vehicle occupant corresponds to claim 35iv.

v. The processor, in response to a facial feature match, identifying the occupant and limiting operation of the vehicle to a maximum driving speed associated with the identified occupant is not explicitly explained by Lemelson et al. Though Lemelson et al do explain changing the settings of a vehicle according to the recognized user in column 11, line 59 to column 12, line 10, they do not explain controlling the vehicle speed.

Heslin et al do explain identifying a driver and limiting the vehicle to a maximum driving speed associated with the driver in column 7, lines 11-14. Lemelson et al explain controlling the parts of the vehicle engine so that the car may be automatically started in column 16, lines 9-25, so embedding a speed control means would be possible in the system of Lemelson et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to limit operation of the vehicle to a maximum driving speed associated with the identified driver so that the vehicle is operated in safer conditions.

Referring to claim 41, the illuminator being an infrared source and the detector being an infrared detector for receiving reflected infrared radiation corresponds to claim 36.

Referring to claim 42, an infrared filter positioned between the detector and the predefined field corresponds to claim 37.

17. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Heslin et al, and further in view of Lu et al.

Referring to claim 43, the infrared source including a cluster of infrared light emitting diodes is not explicitly explained by Lemelson et al or Heslin et al. However, Lu et al explain in column 5, lines 32-34 and illustrate in figure 3 by reference number 56 that an array of infrared light emitting diodes are used to illuminate a face in a facial recognition system (illustrated in figure 5). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to modify the system of Lemelson et al and Heslin et al by using an array of infrared light emitting diodes to illuminate the face of a person, since the Applicant has not disclosed that using a cluster of infrared light emitting diodes solves any stated

problem or is for any particular purpose and it appears that any infrared light emitting source would perform equally as well.

18. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson et al in view of Heslin et al, and further in view of Numazaki et al.

Referring to claim 44, the illuminator being pulsed on and off, the detector obtaining a first image when the illuminator is on and obtaining a second image when the illuminator is off, and the processor determining a difference between the first and second images to mitigate the effects of ambient light is not explicitly explained by Lemelson et al or Heslin et al. However, Numazaki et al do explain generating a first image when an infrared source is on and generating a second image when an infrared source is off and determining a difference between the first and second images to mitigate the effects of ambient light in column 10, lines 40-56, column 11, lines 9-56, and column 14, lines 23-42. Numazaki et al also explain using this processing in a facial recognition system in column 32, lines 43-58 and illustrate the facial recognition system in figure 33. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to obtain a first image when the illuminator is on and obtain a second image when the illuminator is off and determine a difference between the first and second images to mitigate the effects of ambient light in order to determine a more accurate image of a face in the facial recognition system of Lemelson et al and Heslin et al by eliminating the effects of external lights sources (as explained by Numazaki et al in column 10, lines 40-46).

### ***Conclusion***

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Poggio et al (U.S. Patent No. 5,844,573) – To exhibit unlocking an entryway in response to facial recognition of a person as explained in column 4, lines 1-6.

Colmenarez et al (U.S. Patent No. 6,498,970) – To exhibit unlocking a door of a vehicle in response to facial recognition of a person as explained in the abstract.

Lin (U.S. Patent No. 6,108,437) – To exhibit unlocking a door in response to facial recognition of a person as explained in column 7, lines 16-29.

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

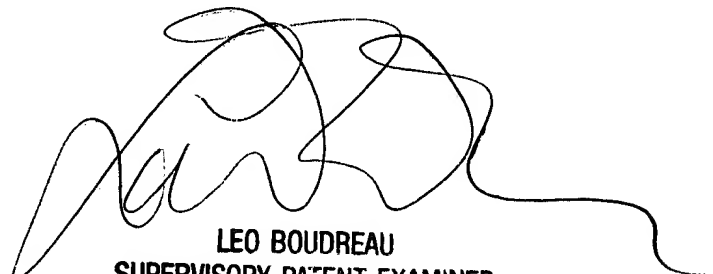
21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hussein Akhavannik  
February 19, 2004

H.A.



LEO BOUDREAU  
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